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ABSTRACT

The crib talk reported here of a 2;2-2;4-year-old boy replicates the phenomenon of crib talk reported in previous studies by other investigators. This study adds a corpus of mother-child interaction (MCI) and tests one aspect of the hypothesis that crib talk may enhance production of linguistic forms at a later date. Transcripts of monologues were scored for the presence/absence of two phonologically identical morphemes in obligatory linguistic contexts and in categories of metalinguistic awareness. Differences in form and function between crib talk and MCI are discussed. The discussion of form concentrates on accuracy of morpheme supplied where required, and frequency of forms produced before the point of acquisition. The discussion of function traces metalingual/poetic awareness, that is language play or practice, inquiry about a form, or focus on form or meaning of a word outside its usual context. It is shown that crib talk accuracy with morphemes is superior to that of MCI prior to acquisition. The findings support the hypothesis that some of the language performances required for analytic metalingual operations at a later date have their precursors in the crib. (AMH)

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CRIB TALK AND MOTHER-CHILD INTERACTION: A COMPARISON OF FORM AND FUNCTION

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Previous investigators of solitary crib monologues (hereinafter called crib talk or monologues) focus exclusively on language produced in the crib setting. Weir's Language in the Crib (1962) concentrates on Anthony's nighttime soliloquies. Keenan's (1974) report on the early morning crib talk of her twins focuses on their rules for social discourse. Neither study compares the children's speech alone to that produced in the mother (or parent)-child interaction setting (MCI). Some researchers (Miller, Jakobson 1962) call for replication of studies of crib talk and suggest a connection between the grammatical play/practice (the metalingual function) of crib talk and increased production with linguistic forms later. Others (Cazden 1973) suggest that language play in the crib and other settings may facilitate learning to read and write.

The crib talk reported here of a 2;2-2;4-year-old boy Carlisle (MLU Stage IV+, Brown 1973), an early reader later at four, replicates the phenomenon of crib talk, adds a corpus of MCI, and tests one aspect of the first hypothesis, that crib talk may enhance production of linguistic forms.

Transcripts of monologues collected biweekly by concealed audiotape (in four time frames: pre- and post-nap and sleep--58 samples) and MCI (10 samples) over nine weeks were scored for the presence/absence of two phonologically identical morphemes (the -s of noun possessive and regular plural) in obligatory linguistic contexts (Cazden 1968, Brown 1973) and in categories of metalinguistic awareness adapted from de Villiers & de Villiers (1978) and Garvey (1977). Morphemes were chosen for the comparison of features in monologues and MCI because there were linguistic criteria already established for tracing acquisition of those forms and, as there was no videotape available for the crib talk samples, linguistic criteria were essential for comparative purposes.

Differences between crib talk and MCI are both quantitative (form) and also qualitative (function). I shall discuss those differences in that order: first form, then function.

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FORM (MORPHEME ACQUISITION)

The statistical differences between crib talk and MCI in terms of form are two: 1) accuracy of morpheme supplied where required and 2) frequency of forms produced before point of acquisition. Those differences will be discussed in that order, with statistics relating to the acquisition of the noun possessive morpheme. Where the phenomena reported here apply to the plural morpheme as well, they will be mentioned.

Accuracy rates for acquisition of the noun possessive -s were obtained from carefully screened categories. Only obligatory linguistic

qualified for crib talk samples, as in the following examples:

Daddy's hat (0/1) where the possessive -s morpheme is supplied where required, or

Nannee air conditioner (0/1) where the -s is omitted where required.

Both linguistic and non-linguistic contexts obtained for MCI samples, as in the following example:

That's Betty's (1/1) (child pointing to brush) where the possessive -s is supplied where required.

(Using linguistic contexts only for MCI samples lowered the totals and eliminated the required three contexts/sample for charting the rate of acquisition of the morpheme.) All ambiguous examples were excluded. Thus, the statistics in Tables 1 & 2 below represent frequencies of obligatory contexts produced, not raw frequencies only.

TABLE 1

Periods of acquisition of the noun possessive morpheme

Type of Sample	Week I (Age: 2;2 1/2) (S_C / S_C + 0)[a]	Week II (Age: 2;3)	Week III[b] (Age: 2;3 1/2)
Monologues	.59 (44/74)	.74 (37/50)	.92 (12/13)
Mother-child interaction	.22 (5/23)	.44 (4/9)	1.00 (3/3)

[a] S_C = supplied in required contexts; 0 = omitted in required contexts (terms suggested by Cazden, 1972, p. 33)

[b] Week III, five weeks later than Week I, is the point of acquisition of the noun possessive morpheme.

At Week I (Table 1 above), Carlisle has not acquired the noun possessive morpheme up to 90% accuracy in 3 successive biweekly MCI samples, the criterion used in this study for point of acquisition. However, his accuracy of production of the noun possessive 's is significantly greater in the crib- than in the MCI-setting, at the .01 level of significance. That difference continues in Week II, though is not statistically significant. At Week III, point of acquisition, both crib talk and MCI samples show an accuracy rate above the 90% level. In subsequent weeks, there is no accuracy difference between the two settings: crib- and MCI-. The phenomenon of greater accuracy alone in the crib replicates for plural -s also, Week II being the point of acquisition for that form.

Table 2 and Figure 1 below illustrate the second quantitative difference between crib talk and MCI samples: frequencies of obligatory noun possessive contexts produced/total number of utterances. As shown in Figure 1, densities of noun possessive contexts in crib talk and MCI samples are not significantly different in Weeks I, II, and III (point of acquisition). However, at Week IV, contexts produced in monologues

TABLE 2

Density (frequencies/total utterances) of noun possessive obligatory contexts in monologues and mother-child interaction (MCI) over a nine week period

Type of Sample	Week I (2;2 1/2)	Week II (2;3)	Week III (2;3 1/2)	Week IV (2;4)	Week V (2;4 1/2)
Monologues	.061 (74/1223)	.037 (50/1356)	.017 (13/760)	.009 (5/561)	.007 (1/152)
MCI	.066 (23/350)	.026 (4/153)	.015 (3/206)	.066 (8/122)	.069 (10/145)

continue to decrease, contexts in MCI portions to increase. That peak of frequency of contexts produced in monologues before point of acquisition of the morpheme replicates for plurals.

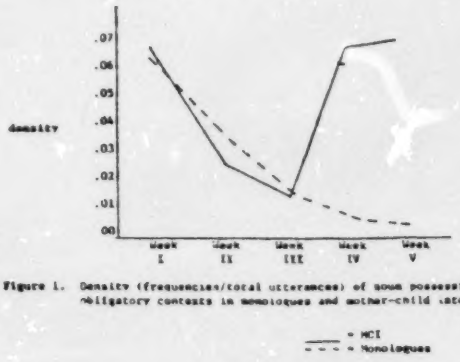

Figure 1. Density (frequencies/total utterances) of noun possessive obligatory contexts in monologues and mother-child interaction

The striking feature of the burst of frequency of contexts produced before point of acquisition is that in the crib setting the monologuing child actively chooses the topics and the contexts for talk, with only self-reinforcement. It may be that the frequency peak of contexts produced in crib talk prior to acquisition shows a cognitive processing strategy peculiar to Carlisle. Only further studies will show if this strategy is an individual one for him or a more general one for other monologuing children.

There is a qualitative difference between possessives produced in monologues and those produced in dialogues (MCI). A few of the contexts produced during Week I look like pattern drills in a language laboratory. There are no such contexts produced during dialogue with mother. In fact, all possessive contexts communicate an idea, an intention, such as Want to go over to Mammy's or Put the diaper in Carlisle diaper bag so de go to Nannee's. The dialogue setting seems inappropriate, if nothing else, to the production of repetitive forms, such as those produced in the following example from a pre-sleep monologue during Week I:

Hey, Daddy (2X)
Dey Andy's eyes--ee
[ai:] (2X)
[yai]
and his *eyes
Mammy's eyes
and Mammy's eyes
and precious eyes
and Fred's eyes
*and Mommy's eyes
*and Nannee's eyes
*and Fred's eyes
Mommy's eye and Mommy's [ee ee]
Tatia's eye and Tatia
*Tatia's eye
Tatia's eyes
Tatia's ears
Tatia's lip (I,3,D)

That same kind of difference exists for plural contexts. However, in addition to forms which are referentially retrievable, such as Raggedy Andy has got two eyes, there are forms which have a "plural" or "possessive" look and appear to be referentially null Give Bop some grapes/ with some napes/ and some box of things (I,3,D).

FUNCTION

The second general area of difference between crib talk and MCI involves function. Here, one function of language is traced: the metalingual/poetic or metalinguistic awareness, that "ability to make language forms opaque and attend to them in and of themselves,..." (Cazden 1973, 3). Awareness as the term is used here refers to the child's language play, language practice, his inquiry about a form, or his focus on the form or meaning of a word outside its usual communicative or referential context.

The examples which follow (taken primarily from Week I) are grouped into four categories of metalinguistic awareness suggested by de Villiers & de Villiers (1978) and Garvey (1977) and are denoted here as "precursors" to the more formal metalingual skills available to older children. Anecdotal, this discussion is of examples chosen as representative of the kinds of examples in crib talk. Where similar examples exist in MCI portions, they will be mentioned.

The first category is awareness of sounds and poetic devices. All examples are at the simple level of awareness; they involve playful production of sounds but no analysis of them. "...[I]t is only much later, at around five years, that children can consciously recognize that words are made up of component sounds" (de Villiers & de Villiers 1978, 165).

In the first week's taping there is only one example of sound play in a MCI sample and that only while mother is out of the room:

Wait right here. Wait right here. [ba ba ba ba].
Oh good uh, good uh, good uh, good uh, good uh.
Oh ba ba ba. Oh do do do. Mm--ma ma ma. hm hm hm (hums)
(I,5,MCI)

Before Carlisle can consciously "make" two words rhyme or select a rhyming word, he creates those, as in the following example. Here the words are said rhythmically as he jumps, as if he is beating out measures. In the first 4 lines, the underlined words are said when his feet hit the

bed; those not underlined are said when he jumps into the air, holding onto the crib railing. The effect is that of clapping to a rhythm:

(jumping):
Here de go take a ride ___ ___
Here we go take a dide
Here we go tender bibe--oh boo
Here we go tender dide

In the same monologue he engages in nonsense sound play, no longer jumping , creates a "baby poem" that begins referentially I did find a baby's chair (he had shopped for a small patio chair the previous day with his mother), and continues exploring the paradigm:

I did find a baby's chair
I did find a baby lair--light
I did find a baby sire-ing--by window
ah tight (I,2,C)

These examples are typical of the kinds of sound play produced in monologues and often go from sense to nonsense.

A second kind of play with sound is "practice play", though such examples are less common. The following example involves practice with the sounds /v/ and /b/, which were allophones of /v/ for him at the time. The day of the monologue two friends Lauren and Valerie had come to visit. The housekeeper could not remember their names. I said, "One is named Lauren and one is named _____." Carlisle said [bæ lə wi]. I asked, imitating him, "Balerie?" He laughed, then said "battery". To see if he could comprehend the difference, though he could not produce it, I went through the following exchange with him:

R.B.: Where does a battery go?
Carlisle: Battery goes in a flashlight.
R.B.: Where does Valerie go? (pause)
Carlisle: Balerie go to Balerie's house.

Later in his crib he practices the form:

ba ba ba ba ba ba ba va
battery
no, battery
batterly
*batterly
*battery
battery battery
battery goes in a flashlight (I,3,B)

His sequence with battery in the monologue is practice with those sounds. When he is satisfied with his mastery of battery, he defines the word and stops the paragraph.

The last example of awareness of sounds and poetic devices shows the process through which he creates a "baby simile", the uniting of disparate elements. The initial referent is the sound of the air conditioner which he imitates by shaking the crib. It does sound like the low rumble of thunder at first. ([ae ae] in the paragraph is a baby talk form for air conditioner.)

/ae ae/, come back on
(pause)
It dooz like that
(pause)
Dat thunder do like that (shaking bed)
Carlisle do like that
Thunder do like that
That way the thunder dooz (=whispered)
*The way thunder shake it
How bout that? How bout that?
/ hi di dai hi di dai /
*Carlisle make like thunder (4X) (I,2,C)

The second category is awareness of word-meaning correspondence and names. Vygotsky notes, "The word, to the child, is an integral part of the object it denotes" (Vygotsky 1962, 128). The two seem almost to be fused. However, as the child develops, "The distance between [the semantic and vocal planes of speech] gradually increases" (Vygotsky 1962, 129).

The only two examples in MCI in Week I show Carlisle's focus on the name or the word for an object. In the first example he is playing with one toy dog, picks up another one, and says,

Carlisle: Who is this doggie name?
Mother: Who--what is this doggie's name? I don't know. What would you like to name him? Give him a name. (I,1,MCI)

He knows the category doggie and that the doggie may have a name, a further degree of awareness of the arbitrariness of le signe. In another sequence the first week, he selects a box of powder and points to the words written on it:

Carlisle: What dis call powder? (pointing to words on box)
Mother: Why is that called powder? Where is that called powder? Right here. (points to word) That says powder.
Carlisle: What does this say? (points to larger word)
Mother: What does that say? That says Caldesene. That's the name of the powder. (I,5,MCI)

In the sequence above he knows he does not know and his additional question suggests that he may see a difference between the two words.

Garvey notes that "...as soon as a child has learned how something is supposed to be, then it becomes a source of fun to distort it or exaggerate it in some way" (Garvey 1977, 70). In crib talk the most usual verbal word play is with proper names and common nouns. Carlisle asks himself in his crib: What dis one name?/What dis one there? and plays with the name of the family cat Bop: uh oh, Bop/ uh oh, boppo woppo boppo/ boppo boppo boppo bop The next day he asks himself what a word means, using the classic metalingual (or glossing) function as Jakobson (1960) defined it:

That dog poo-pooed on Mammy's grass
/ goes /
grass--not Mammy's gas / goes /
That dog poo-pooed on Mammy's grass
gas--gas (fast)
gaslight
what do mean gaslight? (I,4,B)

Carlisle has not mastered the consonant cluster gr and distinguishes the two words grass and gas by only vowel length and quality. The reference is to a gaslight at his grandmother's, one he had mentioned during the day.

Among the pairs of child Garvey (1977) studied she found"the creation of meaningless common names and of proper names that are odd or far-fetched"

to be the most usual categories for nonsense play (Garvey 1977, 70). This is true in Carlisle's crib talk too with names such as Pooma and [wae bo] created.

The last example, though taken from Week II, nonetheless shows Carlisle's awareness of the naming function and of his own inability to retrieve a form and perhaps an early metacognitive process so useful now (as he said, "I don't know the name of that character for my book report"--and thus returns to the book to search for it). In the crib the search is short-lived and successful: I don't know what Minnie's name is / Minnie Granberry.

The third category is awareness of rules and grammar. The MCI portion includes only one example of the focus on the form of a word and the child's inability to distinguish between plug in and unplug. However, in crib portions, there are long stretches of practice play, much self-correction and repetition of forms (as in the possessives example cited above). Much of the awareness of rules and grammar is at a simple level, almost exploring the limits of the rules. The following example shows a transition from past to present tense and a focusing on the irregularity of the verb say. The reference is to a daily routine used with Mother:

Mommy said, knock knock
Mommy said--say? /ˉseˍ/--says /ˉsɛsˍ/
Mommy says /ˉsɛsˍ/ ___ ___ (knocks)

The fourth category is awareness of discourse forms (social and literary). Social forms include routines, such as how do you do? how are you? bye-bye and night-night, and, during later weeks, highly controlled rhythmic routines in which Carlisle takes both parts of the routine. In Week I, however, such play is just beginning. The following example is play with a social routine (in MCI, Mother knocks twice on the door and Carlisle says, Knock, knock, come in). In the crib, however, he elaborates the routine with rhyme and rhythm, finally creating a diminutive of the word knock:

hi ho and
no open de door
knock, knock
knock, knock, come in (pause)
open de door
knock, knock
open de door
knock-y, knock-y. (I,2,C)

Awareness of literary forms includes, in some instances, the naming of a form, such as song or prayer, and creating one, as in the following example:

Sing a sing a song about pee pie
pee pah pee pah pee pah peep
hi----------i
you blackbird
peek a blackbird
one blackbird (sings)
he's a one blackbird (I,1,C)

The last example marks the beginning of creative stories in the crib. A Busy Box attached to the crib contained a sequence of 4 pictures (bear, bird, dog, lion), each of which could be seen by turning a handle. The pictures had early been used as a picture book game, though the practice had been abandonned long before the taping. In later weeks, his narrative skills sharpened, and the crib became almost a stage where he talked out long stories, appropriately shifting reference and speaker, as in Mabel said...and Mommy said...and the dog said. In this example the process is

beginning, a process which today produces long, written stories:

Here was the teddy bear
Here was the teddy bear
*Where is teddy bear?
Teddy bear going to get something to eat
and the bird going to get something to eat
There was the teddy bear get alla those toys
Here was the teddy bear
Here was the teddy bear again
*Where the teddy bear gone? (pause)

*the doggie
dis and dis and dis and dis(pause)
and dis (falsetto)
*Where de teddy bear?
bye bye, dog
Here was the teddy bear again
Here was the bird again
Here was the dog get something to eat.

In conclusion, this paper has traced differences between MCI and crib talk in both form (the acquisition of two morphemes) and function (the metalingual in 4 categories), has shown crib talk accuracy with morphemes to be superior to that of MCI prior to acquisition and has discussed the frequency peak of contexts produced prior to morpheme acquisition. In addition, the study suggests that some of the language performances required for analytic metalingual operations later have their precursors in the crib.

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